DOE WILDLAND FIRE LESSONS LEARNED

01. **Lesson.** A pre-existing working relationship with the appropriate Federal, Tribal, State, and local agencies is essential for effective coordination of wildland fire mitigation activities, as well as during a wildland fire response.

Recommendation. DOE sites with a potential for wildland fires should develop and maintain a close liaison with Federal (U.S. Park Service, U.S. Forest Service, and Bureau of Land Management [BLM]) representatives and consider active membership in the National Wildfire Coordinating Group or other Tribal, Regional, State or local groups that coordinate wildland fire mitigation and response. DOE representatives, in coordination with Site Emergency Response Organizations (EROs) should incorporate these relationships in site planning and preparedness activities (including MOUs/MOAs). The Interagency Wildfire Management Team established by Los Alamos National Laboratory after their Dome Fire experience is an example of a successful venture with off-site organizations.

Headquarters DOE should establish a Liaison Officer (LNO) exchange program for wildland fire events that occur on or impact DOE sites with the Headquarters staffs of the Departments of Interior and Agriculture.

A DOE representative knowledgeable of the capabilities of DOE=s radiological emergency response assets should be assigned to the National Interagency Fire Center (NIFC) in Boise, ID as an LNO during protracted responses involving either DOE sites and facilities or wildland fires involving radiological materials.

02. **Lesson.** DOE needs a Department-wide policy(s) for assessment of wildland fire threats, for mitigation of those threats, and for use of prescribed fires on DOE site property.

Recommendation. EH should develop (and coordinate with the HQ line management and support offices, Operations/Field Offices, and sites with a documented wildland fire threat) a Departmental policy(s) to address fire protection issues that addresses the threat of wildland fires. HQ and Field organizations and sites should also provide support to ensure effective implementation of this policy. Site emergency readiness assurance programs should report the nature, scope, and schedule of wildland fire mitigation activities as part of their annual ERAP submission. EH should also serve as the POC for Federal coordination of the Departmental policy on a Federal interagency basis (e.g., with US Park Service, Forest Service, BLM, USDA, EPA, etc.)

03. **Lesson.** Site Hazard Assessments (HA) and Safety Analysis Reports (SAR) must address the potential threat of or vulnerability to wildland fires; if they do not, site emergency management and response (EM&R) plans may not adequately address wildland fire mitigation and potential response operations and needs.

Recommendation. Site emergency plans should contain information for assessing and mitigating potential wildland fires. The Office of Environmental Health and Safety (EH) is surveying the DOE complex to determine what wildland fire polices have been/are being implemented and to develop a new DOE Policy and/or Order on wildland fire planning, preparedness, mitigation, and response requirements and activities. HQ line management (LPSO, CSO, PSO), HQ support offices (EH, OA, SO-40), and Operations/Field Offices should review such documents during assessments, evaluations, program reviews, and assistance visits to assure their inclusion and adequacy.

04. **Lesson.** NEPA considerations (e.g. endangered species, historic/cultural areas, etc.) should be included in Hazards Assessments and emergency plans. These considerations can have a significant impact on site preparedness, response, and recovery.

Recommendation. NEPA considerations (e.g. endangered species, historic/cultural areas, etc.) should be included in emergency response planning activities. Existing Environmental Assessments (EA), Environmental Impact Statements (EIS), Hazards Assessments, and emergency plans should be reviewed to ensure NEPA issues are considered in the response and recovery aspects of an emergency. HQ line management, support offices, and Operations/Field Offices should ensure NEPA issues are appropriately addressed.

05. **Lesson.** All key EM&R facilities must have an adequate back-up power source(s) to accommodate documented threats, vulnerabilities, and support requirements.

Recommendation. Departmental and Program/Operations/Field Office policies and/or guidance identifying stand-by power program standards for key EM&R facilities at each site should be reviewed and specific requirements developed, clarified, and/or revised. The amount of stand-by power generation capability should be initially assessed based on facility (and possibly site) emergency power needs, potential length of projected emergency operations, and the possibility that such capabilities will be used to augment or supplement non-DOE emergency response requirements. Stand-by power production capabilities would have to be tested on a regular basis.

06. **Lesson.** Off-site responders must always be given briefings on radiation and other site work area hazards prior to beginning work as required by DOE Order 151.1. Personal monitoring and bioassay plans must ensure that all necessary information will be available and provided to off-site responders and that responder health and safety are fully protected.

Recommendation. Sites should review their emergency notification policy and procedures to ensure out-of-area responders are provided the necessary radiation safety briefings. In addition, appropriate site-specific radiation monitoring/dosimetry program plans for both on-site and off-site emergency response personnel should be reviewed and revised as appropriate to assure responder health and safety. If not already available, a Ageneric@ emergency responder briefing should be developed and tailored to each site (and/or

facility on each site).

07. **Lesson.** DOE personnel that interface with off-site emergency response agencies are more effective if qualified in the Incident Management/Command System (IMS/ICS); this ensures sites can effectively function in a Unified Command environment under IMS/ICS.

Recommendation. At a minimum, all DOE emergency responders who are expected to interface with off-site agencies or serve as a DOE Incident Commander (IC) should be trained in IMS/ICS procedures. Also, it would be beneficial for members of the site=s ERO and/or emergency management team to have an understanding of IMS/ICS terminology and procedures. (Training for those designated as a possible IC must meet the requirements found in 40 CFR 300.)

Sites should adopt the IMS/ICS that is used by local, State, or Regional agencies that provide assistance to the DOE site. For example, the State of New Mexico, by Executive Order, mandates the National Interagency Incident Management System (NIIMS) as the IMS/ICS for State and local emergency responders. In the absence of a locally designated IMS/ICS then NFPA Standard 1561, *Standard on Emergency Services Incident Management System,* provides information on developing incident management systems. DOE is considering mandating NFPA Standard 1561 in the next revision to DOE Order 151.1. IMS programs such as NIIMS should also be reviewed.

The specific type of IMS/ICS to be used should be documented in the various MOUs/MOAs between site emergency services personnel and the outside agencies. The site emergency management plan should identify the specific IMS/ICS to be used. Site emergency readiness assurance programs should document the need for, extent of, and status of such training as part of their annual Emergency Readiness Assurance Plan (ERAP) submission.

08. **Lesson.** Recovery planning should occur concurrently with the emergency response; recovery resources, funding, and liability issues must be identified and planned for or their potential scope and impacts may not get addressed adequately or in a timely manner.

Recommendation. Site emergency plans and procedures should be reviewed and updated to ensure they adequately address assessing potential events and projecting what resources and actions will be needed to recover from those events. Prior arrangements with response material suppliers and/or Blanket Purchase Agreements (BPAs) should be negotiated for materials and equipment; otherwise these items will often not be available in the type, quantity, and/or time requested.

09. **Lesson.** Use of joint field monitoring teams (DOE, EPA, and State) helps resolve differences in radiological monitoring data collection and interpretation; early resolution of differences enhances the acceptance of such data and interpretations by Federal, Tribal, State, and local jurisdictions.

Recommendation. DOE representatives, in coordination with the sites should develop MOU/MOAs with Federal, State, and local agencies to deploy joint monitoring teams. These MOUs/MOAs would probably need to address areas such as integrated procedures for collection and sharing of monitoring data, assessing and interpreting the data and their impacts, and joint operational, technical, and logistic considerations. Joint involvement in training, drills, and exercises are an integral part of this process; enhancing the effectiveness of working relationships when an emergency occurs as well as the acceptance of the products from these joint efforts.

Additionally, site joint radiological monitoring team policy and procedures should be integrated with Federal Radiological Emergency Response Asset policies and procedures (e.g. RAP, FRMAC) to develop a coordinated set of procedures for radiological monitoring efforts. Existing FRMAC radiological response documents should be used as a baseline for this process.

10. **Lesson.** EM&R logistics and support must be anticipated and planned. Housing, food, transport, and other support that is not planned for may not get addressed prior to its need.

Recommendation. Some type of BPA should considered and if appropriate, be in-place with local hotels, car rental companies, construction supply (i.e. Lowe=s, Home Depot) companies, etc. for projected services and materials prior to an emergency. DOE Area Offices in coordination with the sites should develop MOUs/MOAs with other governmental agencies, non-governmental agencies (e.g. Red Cross, Salvation Army, Mennonite Relief Services, etc), or private concerns for access to support materials (i.e., beds, mattresses, blankets, towels, etc.) and/or services (i.e., parking, showers, fixed/portable sanitary facilities, etc)

11. **Lesson.** Post Incident Analysis (PIA) reports must be prepared as soon as possible after an event impacting a DOE site has been resolved. PIAs should contain descriptions of remedial activities taken by an ERO and any lessons learned information the site considers useful to on-site organizations and/or other organizations within the DOE complex.

Recommendation. A PIA, with sufficient detail about how an event was handled and what did/did not work (e.g., lessons learned), should be prepared once all time-sensitive and emergency response activities have ended. All such PIAs and/or the emergency-specific lessons learned identified during the course of the response should be initially available for use by organizations and sites within the DOE complex. Subsequently, these reports may be released to individuals and organizations outside DOE. The methodologies used to conduct a Class B Safety Investigation should be used as the basis to ensure an established and standardized methodology is used to identify potential safety and emergency response issues. DOE should prescribe one standardized PIA procedure in the next revision of DOE Order 151.1.

12. **Lesson.** Wildland fires and the response to them affect radiation deposition in the particular geographic area of the fire/response; baseline area radiation deposition measurements taken before the fire/response may no longer be valid.

Recommendation. The recovery planning process should include identification of current hazards. If areas of known radiation deposition have been affected by the fire/response, such planning should include the need to provide for and conduct new baseline radiological surveys.

13. **Lesson.** At times, the information demands of DOE HQ overwhelmed site response personnel and affected both on-site response coordination activities and emergency operations.

Recommendation. The DOE Operations or Area Office representative(s) should be designated as POC(s) for HQ contacts and present in the EOC during an event. Standardized HQ reporting formats, times, and briefing requirements should be developed and their use integrated in training, drills, and exercises, as well as emergencies.

Procedures should be developed to assure site POC(s) notify HQ per those standards or when on-site conditions may interfere with the site=s ability to meet HQ=s information requirements. Pushing information to HQ will minimize the number of contacts HQ should or needs to make with the site. Public affairs information needs to be available at HQ prior to public release whenever possible.

14. **Lesson.** Foreign nationals visiting or using DOE laboratory facilities may not be able to collect compensation for losses incurred as a result of a wildland fire or the response to it.

Recommendation. Foreign nationals working at or visiting DOE sites for extended periods should be briefed on this possibility. The briefing should identify site-specific threats and vulnerabilities, identify that DOE does not provide insurance coverage for non-DOE property that may be damaged/lost as a result of working at or being on its sites, and should advise them either to adequately insure their personal property or to seek advice from their respective Embassy, Consulate, or employer.

15. **Lesson.** Sites and facilities must adequately train, drill, and exercise their EROs (and their non-DOE counterparts) with wildland fire scenarios.

Recommendation. DOE sites should plan and conduct comprehensive training, drills, and exercises to ensure all ERO members are knowledgeable on wildland fire plans, procedures, necessary resources, and off-site agencies responding. The scope, frequency, and duration of these activities should be based on the perceived nature of the threat and an assessment of previous fires and their impacts. Biennial exercises are recommended as a minimum. Where possible, sites should include participation of non-DOE responders in such activities.

16. **Lesson.** An imperative during a wildland fire is ensuring that on-site and off-site response agency media relations are coordinated so contradictory information is not released.

Recommendation. Ensure all response agencies are located or represented in a Joint Information Center (JIC) established by DOE or the agency responsible for leading the overall response. At the JIC, procedures need to be implemented to provide for all media releases to be coordinated prior to release to ensure a continuity of information. Whenever possible, coordination would include on-scene, regional/state, and response agency HQ-levels.

17. **Lesson.** Site-level emergency planners need to become more familiar with the various standards and information available on wildland fires. DOE sites that are vulnerable to wildland fires should have personnel trained and qualified as Prescribed Fire Planners (and other necessary positions) under the National Wildfire Coordinating Group=s AWildland and Prescribed Fire Qualification System Guide (PMS 310-1). Personnel qualified in these positions are better able to evaluate proposed prescribed burn fire plans and operations.

Recommendation. Site emergency planners should review the information on the U.S. Forest Service and BLM web sites. A number of National Fire Protection Association (NFPA) Technical Standards on all aspects of wildland fires exist and are available through the NFPA. DOE sites should also review all the above referenced documents on qualifications and contact regional offices of BLM for the appropriate training courses. Training information can also be found at the following web site: http://fire.nifc.nps.gov/sacs/html/training.html. Sites should also update the training section of their emergency plans to define what wildland fire or related training is required for which ERO members.

18. **Lesson.** Communication Operability and inter-Operability issues complicated the response efforts. Site ERO paging systems did not always function in a timely manner. Off-Site emergency responder communications equipment were not compatible with on-site communications systems.

Recommendation. Group paging priorities should be identified and included in the emergency plan along with a procedure for regular tests of the system. A procedure for issuing site communications equipment and providing training on this equipment to arriving off-site emergency responders should be developed and included in the site emergency plan. Web based internet communications need to be explored and developed in more depth.

19. **Lesson.** Unexploded ordnance, inert ordnance and other hazards not specifically associated with particular facility operations should be identified and mapped as part of environmental restoration activities. Restoration personnel should periodically update these maps as new items are discovered.

Recommendation. Evaluate and formalize the updating and distribution of these maps to emergency response facilities as new items are discovered.

20. **Lesson.** Many emergency response organizations operate with four teams each on duty for 24/7 on a rotating basis. A long-term staffing procedure, policy or mechanism should be in-place for staffing appropriate positions during extended operations.

Recommendation. Evaluate and formalize as necessary a long term staffing mechanism. Agreements with other DOE sites for providing emergency staffing assistance or possibly with off-site emergency response agencies should be considered.

21. **Lesson**. Facility evacuation and accountability procedures are written for evacuation due primarily to radiological or chemical emergencies and do not address evacuation or personnel accountability during wildland fire events. During wildland fire evacuations vehicles left in parking lots on-site may add to the fire danger.

Recommendation. Evaluate and revise evacuation procedures to address wildland fires and the removal of private vehicles as safety permits.

22. **Lesson.** Hazards Assessments sometimes screen out facilities that are below the planning thresholds, but may contain materials that could complicate a wildland fire response (e.g. explosives storage, small quantities of chemicals, limited amounts of ammunition). Mitigation activities may also reduce or eliminate a facility=s threat during a wildland fire, but this information may not be readily available.

Recommendation. Evaluate the need for additional information that identifies facilities containing quantities of materials that have been screened out by the hazard assessment process. Additionally, evaluate and establish, as appropriate, a formal procedure of notifying all duty teams of the identity and location of areas where additional hazard mitigation has been undertaken.

23. **Lesson.** Some sites conducted Critical Incident Stress Debriefings (CISD) for emergency responders and wildfire victims during the recovery and demobilization phases of the event.

Recommendation. All sites as part of their response and recovery efforts should incorporate a mental health capability. During the response trained mental health providers, clergy, and other qualified personnel should be available to monitor the mental health of the emergency responders and to assist with disaster victims. CISD should be made available to the emergency responders in a timely fashion after the disaster demobilization occurs.

24. **Lesson.** A number of State, Tribal, and local emergency planners and responders were not aware of the full range of DOE=s radiological emergency response asset capabilities that could assist with radiological materials issues.

Recommendation. Sites should ensure that information on DOE=s radiological emergency

response asset capabilities are included in the off-site orientations provided to agencies that will respond to assist at DOE facilities during emergencies. The HQ Office of Emergency Response (SO-42) should develop presentations and provide information to the various emergency management and response professional organizations to help enhance the knowledge level of the respective memberships. Organizations such as the National Emergency Management Association, the International Association of Emergency Managers, International Association of Chiefs of Police, National Association of Emergency Medical Technicians to name a few, would be able to distribute DOE capability information to their memberships.

25. **Lesson.** At one site a National Oceanic and Atmospheric Administration (NOAA) meteorologist was present to assist with weather forecasting and providing timely meteorological information for both plume modeling and weather impacts on emergency responders.

Recommendation. Sites should contact local NOAA offices and explore the possibile benefits of a NOAA meteorologist augmenting the site EOC staff.

26. **Lesson.** Each State has Department of Defense (DoD) Emergency Preparedness Liaison Officers (EPLO) in their State and Region. These EPLOs provide the interface between DoD and State, Tribal, local, and DOE Site emergency response agencies. EPLOs are not well versed in DOE site operations, hazards, or radiological emergency response asset capabilities.

Recommendation. Sites should contact the respective state emergency management offices or Forces Command Headquarters, Ft. McPherson, GA (404) 464-7900 to identify EPLOs in their areas and offer them briefings on DOE site hazards and response capabilities. The DOE Office of Emergency Response Director is scheduled to make a presentation on DOE=s radiological emergency response asset capabilities at the 2001 National EPLO conference, March 2001, in Atlanta , GA.